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FERNALD LIVING HISTORY PROJECT
Transcript

Name: Bernard Gessiness
Date Interviewed: 02/23/2000 Date Transcribed: 05/24/2000 Tape: 103 Project Number 20012

Tape FLHP0252

01:01:04
Q:
Great. Okay, um, first of all, if you could give us your name and spell it. Make sure we have that right.

A:
Okay. I am Bernard Gessiness, G-E-S-S-I-N-E-S-S, Gessiness, universally known as Bernie.

Q:
Terrific. And um, first of all, if you could give us a little bit of um, personal background information; where you were born, where you were raised, where you went to school, those kinds of things.

01:01:30
A:
I was born in Covington, Kentucky, uh, on June 4th, 1924. And uh, I went to grade school there, went to Holmes High School, graduated from Holmes High, and then went to the University of Cincinnati, uh, and did all of my uh, academic studies at U.C. Uh, I have a Bachelor's Degree from the University of Cincinnati, a Master's Degree in Chemistry.

01:01:58
A:
And uh, almost completed the work for the Ph.D. degree in Chemistry at U.C. And uh, I also taught there for six years, uh, four years part-time and two years full-time before I started to work at Fernald in 1952, in the summer of 1952.

01:02:21
Q:
Great. And you can just talk to me, like we're having a conversation. (Comment: Okay.) Um, and uh, how did you find out about the job at Fernald?

A:
I saw an ad in the paper. I was teaching at U.C., and uh, was rather tired of the academic life and the low pay. And uh, I happened to see an ad in the paper that they were opening a plant out there. And I so I went out there, I remember getting lost on the, on the road in a place called Bevis. And I stopped at a gas station to ask them, "Where is this place? How do I get there?" And uh, I finally found it that day and spent the rest of my life there.

01:03:08
Q:
What was your very first impression of the plant when you got there?

A:
It was under construction. And uh, I was very impressed with the size of the place, the magnitude of the uh, operations that were being projected for it. And uh, uh, we were told that uh, it's going to become a nuclear plant. Uh, they're going to make uranium metal there, and it will be part of the defense programs

of the uh, Atomic Energy Commission, which was the uh, group at that time, the federal agency that was operating the plant.

01:03:47
A:
And National Lead Company of Ohio would be my employer. And so I started to work there in July of 1952, and remained there for 35 and a half years.

01:04:01
Q:
Tell us a little bit about your interview. Who interviewed you?

A:
Someone from the personnel department interviewed me. And I pointed out that I was a chemist, an analytical chemist, and I had a good knowledge of organic chemistry. I taught organic chemistry, I taught analytical chemistry, and it so happened that they were in the process of constructing a laboratory building on site. And analytical chemistry was very important to them because they were going to have a big analytical lab.

01:04:38
A:
And uh, so I was hired (telephone rings once). I seemed to fit right in to what they were about to do, and uh, my very first assignment in the summer of 1952 when I came there, was to outfit the laboratory building. I spent many weeks uh, going through catalogues, all kinds of chemical laboratory catalogues. And selecting all of the various kinds of equipment, lab room by lab room, and all of the various chemicals that I thought would be needed to perform the analyses that we were going to do before the lab building was ever opened.

01:05:22
A:
And finally in September of 1952, the Lab Building was completed, and uh, we had received a lot of the equipment and chemicals that I had ordered, and we were ready to start to work. And the AEC local office informed us that before we could move into the Lab, we had to present to them an analytical lab manual.

01:05:47
A:
So I uh, went to work with three stenographers, and we sat from morning until night, for two to three weeks. And I dictated to them hours and hours per day, various analytical procedures that I felt would be necessary to do the analytical work that we would have to do in order to support the production operations. And uh, it all got printed, and it was published in three volumes, uh, for use in the Lab Building.

01:06:20
A:
And uh, the lab manual was used for the first several years of our operation when it was expanded and revised after we knew more fully what we were actually going to be doing. And um, the AEC local office then gave us approval to open the Analytical Department in the Lab Building and begin functioning as a support for the production operations.

01:06:48
Q:
Tell us about startup. Because they were building the plant while you were there, from what, about until about '54 when they were completely (Comment: Yes.) fully started up. Can you tell us about your job in those startup years?

A:
Well, the startup was done primarily in the Pilot Plant. We had a Pilot Plant, and they had operations there that were to mirror the operations in the plants. They had a refinery operation, they had a uh, a green salt production operation, they had a derby production operation. All of these things were in the Pilot Plant in miniature. And uh, they were doing all of this work in the Pilot Plant before each one of the production plants was allowed to start up.

01:07:38
A:
As a matter of fact, there was one room set aside in the Pilot Plant as an analytical lab room. And a number of analysts were working in that lab room before the Lab Building was open, servicing the preliminary work that was being done in the Pilot Plant before most of the production plants were ever opened. So the Pilot Plant was the forerunner for each of the production plants.

01:08:08
A:
And then one by one, the production plants began to open in 1953, in 1954, and so on. And the plant that I was most interested in was Plant 1, the Sampling Plant. That's the plant that would receive the ores and concentrates from the Belgian Congo and from other parts of the world, and would eventually become the official weigher and assayer of the uranium ores and concentrates.

01:08:42
A:
And it is from those ores and concentrates that the refinery would begin their process of refining the material and producing a pure uranium nitrate solution that went on to become orange oxide and green salt and then eventually uranium metal. So all of this came about in the early years. And um, I went to the New Brunswick Laboratory of the AEC and spent some time there learning and becoming familiar with the analytical procedures that were in use in those days.

01:09:18
A:
Uh, they were the only lab the country that was expert in uranium and thorium analyses. And so I went there and brought back with me the procedures that they were using, and my first job as Chief of Analytical Development. It was my job to develop analytical procedures for uranium and thorium that were specific for the kinds of materials that we would be working with and we would be processing.

01:09:48
A:
And so I did this in the early years until we were designated as the official assayer of uranium ores and concentrates. And then I was put in charge of what was called the official assay lab. The lab that did the assay of the ores and concentrates for which payment was made by the Atomic Energy Commission to the vendors. In those days, the going price was $8 a pound for U_3O_8.

01:10:21
A:
And so the AEC had contracts with the Belgian government, and so we purchased ores and concentrates from the Belgian Congo, and a little later on from the Australians, and then from the Colorado Plateau area, and from 12 or 15 mills in Canada, and from Portugal, and also from South Africa. And it turned out that the South African concentrate, which was called "Klaproth's concentrate," was the best of all the feed materials for the Refinery.

01:11:00
A:
It assayed about 60 to 80 percent uranium, was the purest of the materials, was the easiest to work with, was the best to process through the refinery, and I was told that it was the tailings from the gold mining industry of South Africa. That in addition to uh, mining in South Africa for gold, that uranium became one of their most important byproducts.

01:11:25
A:
And so that material came to us routinely, and we received these ores and concentrates until about 1965. So this was the principal function of Plants 1, 2, and 3. And I was intimately involved with all of these operations. And in the summer of 1959, the technical director asked me if I would transfer from the analytical department to a group called Accountability.

01:11:55
A:
Because there were problems in keeping track of the materials that were being processed in the plants, particularly in the Refinery. There was a great discrepancy in the summer of '59 on the material balances for the Refinery operations. And so I took on this job, I went out to the Refinery every month, at the first day of each month.

01:12:19
A:
And climbed on top of all the tanks, and I measured the tanks, measured the outage level of liquids in the tanks, and I took samples uh, from each of the tanks. There were 50 or 60 tanks. We would sample them on the first day of the month, send the samples to my former laboratory that I had been in charge of, and we would await anxiously the analyses.

01:12:46
A:
And then total up uh, what the total uranium content was in the Refinery and see how that compared with our book records. And each month, we made such a comparison, of physical inventory versus book inventory. And if life was absolutely, they would be exactly the same. But life isn't that perfect, and as a result, every month, there was what was called a BPID. A Book minus Physical Inventory Difference.

01:13:18
A:
And it was my responsibility to explain to the Atomic Energy Commission in Oak Ridge each month, why those differences occurred, how much they were, and what we were trying to do to improve the balances. And after a period of a number of months, we had those balances very much improved. And uh, we not only had to do that, but we had to do material balances for all of the operations on site.

01:13:48
A:
And uh, as an accountability person, I had set up a series of material balance areas. And for normal uranium, for enriched uranium, for depleted uranium, and for thorium, we had a total of 54 material balance areas on site. Sort of like individual checking accounts. And just as you have to balance out each month, your own individual checking account when you get your statement from the bank, so it was our responsibility.

01:14:22
A:
And that of a half a dozen accountants, whom we had working for us in the Accountability Department, to balance out those 54 balance areas. And each month, we calculated what we had on our books versus what the inventory told us we had, and then we had to report this to Oak Ridge and to our own management and to be able to explain what these differences were and why they occurred.

01:14:49
A:
And I had a staff of technical people whose job it was to review all the weighing that we did on site, all the sampling that we did on site, all the analytical work that we did on site, to see if we could improve our measurements. Because part of the problem of having these differences, or imbalances was due to the fact that uh, our inability to measure the materials more carefully or more accurately.

01:15:19
A:
Some of them were extremely difficult to measure. And we began receiving residue materials from all over the country to have the uranium recovered in Plant 8, our Recovery Plant, and later on in the Refinery. And as a result, people shipped us all kinds of awful cats and dogs as far as residues were concerned. All kinds of unspeakable things.

01:15:45
A:
And it was my responsibility as a chemist to figure out how materials should be sampled and evaluated, or converted to a form that we could measure. Because we had to come up with an accurate measure of how much uranium or thorium did you actually send us. And not only was everyone in the country directed to send their uranium residues to us for recovery, but we were also designated to be the official repository for thorium in the United States.

01:16:17
A:
Everyone in the United States who had any thorium was directed to ship their residues or their thorium materials that they no longer needed or wanted, to us. And so we had to come up with analytical methods and all the means necessary to evaluate the true thorium content of whatever it was that people shipped to us. So this was part of my responsibility.

01:16:42
A:
And at the beginning of 1962, I was designated as the nuclear representative for the National Lead Company of Ohio. This is the single individual in each site who is responsible for maintaining official

contact with the Department of Energy. And also responsible for dealing with the nuclear material reps at all other sites around the country.

01:17:07
A:
And it was my responsibility to control all the offsite shipments that we made, all the offsite receipts that came to us from all over the country. And to regulate the flow of materials from one plant on site to another, from one balance area on site to another. In some o' the plants, we had several material balance areas in the same plant.

01:17:33
A:
And if you moved material from one aisle to the next, you were crossing a boundary from one material balance area into another. For example, in Plant 5, we had part of the plant was the reduction area for making derbies, and the other part o' the plant was the remelt area for making ingots. And you have to imagine a line (motions with his right hand, fingers together and pointing down) between the two, an imaginary line.

01:17:59
A:
And if you move derbies across that line, you're going from one material balance area into another. And there had to be an Inter-Plant Transfer prepared, so that on paper, we're transferring the material from one side o' the plant to the other side o' the plant; from one material balance area to another material balance area. And my accountants kept track of all o' these materials.

01:18:21
A:
And every month in Plant 5, there would be one balance calculated for the Reduction Area and another balance calculated for the Remelt Area. In Plant 6, the Rolling Mill was running in the early years, and we had to calculate what was going in and coming out of the Rolling Mill area. And then we had the Machining Area in Plant 6. And we had to keep track of all the material that went through the Machining Area, which was enormous.

01:18:49
A:
And then we had an Inspection Area in Plant 6. Before materials were shipped out, they went into the Inspection Area. And here again, that was a separately designated material balance area. We had to balance out on all o' these areas every, every month. And then about 1970 or so, we went from monthly inventories, to quarterly inventories. So instead of doing all o' this twelve times a year, we only had to do it four times a year.

01:19:17
A:
And in the case of thorium, we only took inventory once every year, annually. And so this is what our function was, to keep track of the materials that came in from off site, that were shipped off site, that were moved on site from one area to another. And uh, this is what we did over the years. And we maintained contact with all o' the nuclear sites coast to coast.

01:19:46
A:
I knew these people personally, and I got involved in the Institute of Nuclear Materials Management, where all o' these people came once a year for meetings. I became the national chairman of INMM, 1968 to '70. And got to know all these people on a first-name basis so I could pick up the phone and call them, and talk to them as friend to friend.

01:20:13
A:
And say to them, "I don't believe that you shipped us 1000 pounds of material because our weights and our analyses indicate you only shipped us 950 pounds. And so we need to resolve the shipper/receiver differences between us." And we did all these things of course, on a friendly basis. So this is the kind of things that we did.

01:20:38
Q:
Now when there was material missing, missing, (Comment: Yes.) um, what kind of justifications did uh, did you have to?

A:
Uh, one of the biggest sources of missing materials was due to what we sent to the pits. Uh, day and night, people were making shipments to the pits. As you know, we have six huge pits. Two of them were rubber-lined, and four of them were clay-lined. And uh, throughout our operations, we were routinely transferring materials to the pits.

01:21:15
A:
And uh, we had a system set up in Nuclear Materials Control that nothing could be shipped to the pits without our review, and without a sample being taken, and without the material being weighed and analyzed. So we had analyses for materials going to the pit. And production people had certain specifications they had to meet. They could not throw something away unless the uranium content was say, below $1/10^{th}$ of 1 percent.

01:21:47
A:
And so presumably, everything they were discarding met that criteria. But time and again, it appeared to us that they were violating it, because they would continually take samples that didn't meet specification and re-sample. There was a standing joke that in Plant 8, there must've been a drum of white sea sand sitting there.

01:22:14
A:
And if they sent a sample of what they wanted to throw away two or three times, then it didn't meet the lab specification, they must've reached in and sent a sample to the lab of white sea sand. Because eventually it did meet throwaway specifications and a truckload of material was taken out to the pit and dumped. And so when materials were unaccounted for, or missing, or we couldn't add up what our inventory showed, we would certainly think that the pit is containing that missing material.

01:22:47
A:
And now that the pits are finally, after all these years, going to be excavated, I feel certain they're going to come up with thousands, and thousands, and thousands of pounds of uranium. A lot more than we ever ascribed as being discarded in the pits. And the other problem had to do with holdup in the equipment. We would clean out the plants thoroughly before we took physical inventory.

01:23:13
A:
The plant was shut down for two or three days before physical inventory, much to the aggravation of the plant production superintendents. They hated me, because I made them shut down two or three days each month, and lose production. They had to shut down and clean out the plant thoroughly in preparation for inventory.

01:23:35
A:
And there was always material held up in equipment, and in pipelines, and in so on, that was inaccessible, so that we never really got a good uh, idea or estimate of how much that hold up was. That was particularly true in Plant 4, where they had reactors for producing green salt. There was enormous hold up in those reactors.

01:24:02
A:
And we were, even though we tried to shake them down, and clean out the plant as thoroughly as we could, much to the aggravation of the production people. There was always hold up in those plants, we could not really say for sure. And so even though we couldn't uh, add up the total quantity and come out with a, with a balance that was absolutely perfect, one of our crutches that we leaned on was the estimate of the hold up in those reactor banks.

01:24:35
A:
Uh, and uh, we had all kinds of engineering estimates trying to determine what the hold up actually was. And so this is the kind of problems that we faced. Uh, discards, and other measure losses we kept track of, of uranium that was sent to the river. And here again, it had to meet a certain discard limit or else it was held up in the general sump and reprocessed.

01:25:05
A:
Uh, we took great pride in the fact that we did not send anything into the river that did not meet specification. Each month, we worked with Health & Safety on stack losses. And there were samplers, and all o' these smokestacks on every, in every plant. And every month a report came to me on the amount of uranium that was in those smokestacks that got out.

01:25:28
A:
And sometimes you could see orange oxide or green salt on the roof of a plant, indicating that some had gotten out. And then we would attempt to estimate how much that was. And of course, we would institute an immediate cleanup, because it was very embarrassing when something like that happened.

But it did happen. From time to time, dust bags broke, and uh, there were other problems, that uh, a surge of material would cause dust losses going out the smokestacks of individual plants.

01:25:02
A:
So all of these things entered into our calculations. And we were continually trying to improve our ability to measure the materials, and to uh, sample them and analyze them in an effort to come up with the best balances that we could. And we had a statistical program going whereby over the years we established a statistical control limits on what is the maximum allowable amount of uh, inventory difference for each of the balance areas.

01:26:34
A:
And each year we issued a whole new set of control limits, and we issued a set of guidelines on what these losses were, and what the could expect to be in the coming year. This was part of our statistical program. And each year, the uh, DOE sent a team of eight, or ten, or twelve, or even fifteen people to our site from Oak Ridge on the first of uh, well, for the April 1 inventory. They would come in about a week before the first April, in late March. And they would spend two to three weeks with us.

01:27:19
A:
And they would go out on inventory with us on April 1. And uh, they would accompany us plant by plant to see what we were doing, and how we were doing it. And they asked us lots and lots of questions, and filled out all kinds of questionnaires. And year after year, we got the most excellent rating from the Oak Ridge survey team, they were called the survey team, uh, on our accountability operations.

01:27:45
A:
They said we had one of the very best nuclear materials control operations in any of the Oak Ridge complexes. And that's how come they asked me to prepare the booklet that I showed you, our Nuclear Materials Control Plan that I did in 1981. Where we summarized all of our operations for nuclear materials control, and showed how we were controlling the materials so that we could account for them in the best manner that was possible under the uh, what was known in the state of the art at that time.

01:28:21
Q:
That's great. Um, how valuable is, a lot of people say, "Well, why do you need to track this material so carefully?" Um, how valuable was the inventory at Fernald?

A:
The inventory at its height was evaluated by our cost accounting people as being worth 750 million dollars three-quarters of a billion dollars. So that's quite a bit of money, and it was our responsibility to keep track of that material, to know where it is at all times. And to um, be able to show the Department of Energy where it was and that we knew where it could be located.

01:29:10
Q:
Great. We're gonna take a break and switch tapes.

02:01:01
(Video resumes without audio.)

02:02:06
Q:
Got a problem here. You want me to put that question out again? I'm sorry, we need to start that question again (laughs). So in 1984, dust collector releases if you could just explain what was going on on site at that point.

02:02:21
A:
Well, uh, on a day in 1984, there was a release, an accidental release of uh, uranium oxide, black oxide, U_3O_8 from a dust collector, from a smokestack uh, in Plant 9. This resulted in black oxide being released to the environment. It was on the roof and the winds, the prevailing winds that day may have carried it onto some of the local area, local environment.

02:02:57
A:
This was reported by our management immediately, and by the Department of Energy, and it got into the newspapers the very next day and became a headline from that point on. Uh, it was an accidental release. There were, from time to time, a few accidental releases over the years. It's impossible to operate a plant that is as difficult to operate technologically as our plant without having some kind of mishap.

02:03:29
A:
Uh, the Plants 1, 2, 3, and 4 dealt with chemical processes, and 5, 6, and 9 dealt with metal processes, and all o' these things are difficult and complicated. And it's only natural that sooner or later something like this would occur. And of course it gave uh, a black eye to our operations at the time, and no matter what we did at the time to improve the operations and so on, it was most difficult to try to overcome the effects of that specific incident.

02:04:09
A:
And uh, that's all I can really say about it. It was very regrettable. We felt very bad about it. **Nobody wants to have an accident. Nobody wants to release material into the atmosphere, but dust bags break, and people do make mistakes.** People press the wrong button, or do whatever they shouldn't do; all of us are human. And as a result, this kind of incident was inevitable, and it did occur.

02:04:40
A:
Uh, it's not the first incident of its kind. There were others over the years. They were all isolated incidents. They were always investigated fully, and reported on fully. It was always my job to come up with an estimate of how much material was lost. It was not my job to determine why the incident occurred, that's somebody else's job. My job in Accountability and Materials Control was to determine the exact quantity of material that was lost uh, in the release.

02:05:15
A:
And we did that. We came up with what we thought was the best possible estimates for the release of materials. I had mentioned to you previously that every month, we reported on measured losses, from the smokestacks, and to the river, and to the pits, and so on. This was something we did routinely every month. Ordinarily, the stack losses were extremely low.

02:05:43
A:
They amounted to virtually nothing every month, perhaps a pound or two over the entire site. And we were very, very proud of those low stack losses. When an incident occurred such as this in 1984, a number of pounds of material was accidentally released to the atmosphere, and unfortunately it created a very bad impression of our plant and its operations throughout the community.

02:06:11
A:
And throughout the nuclear industry. The whole nuclear industry suffered as a result of our regrettable incident.

Q:
What was the media attention like for you in your job?

02:06:28
A:
I didn't have any problem with it personally. No one ever came to me and asked me for my comments. Uh, we had a staff of people whose job it was to provide public relations for this site. They were the ones who were contacted. And I don't know how much technical background they had. Either they or our management had a answer to the press. But no one ever came around and asked me about it at all, you're the very first one, many, many years later.

02:07:06
A:
And uh, and so I'm simply telling you that there was an incident, it was an isolated incident, that things like this can occur, and there have been a few incidents over the years. Uh, on Valentine's Day in 1966, a cylinder of UF_6, uranium hexafluoride ruptured. And we all ran to the cafeteria to take shelter until they were able to plug up the hole, the opening in this big cylinder of UF_6.

02:07:37
A:
And I don't think as much was made of that incident that day as was made of the stack loss at Plant 9, which in reality, was a much more serious incident. And what happened was that a plug came loose on this huge cylinder. And so things like that can and do occur when you're working with dangerous and hazardous materials.

02:08:02
Q:
And in your estimation, the types of material that was released from the Plant 9 dust collector, how harmful could that be to anybody? And how far would it have gone?

A:
U_3O_8 is extremely heavy, and I can't imagine unless there was a gale wind blowing that day, that it went very far. And I don't recall now how far they had estimated it had gone. But uh, it was cleaned up I'm sure, the next day as thoroughly as they possibly could. And people like Mike Bobeck could give you a much more accurate estimate as to how far they estimated it went.

02:08:44
A:
But uh, U_3O_8 being extremely heavy, it could not have gone very far.

Q:
And what was your impression of the aftermath of all that? Um, you know, because then there was a lot of stuff.

02:08:59
A:
We were watched. From that point on, we were watched. Every move that we made was thoroughly scrutinized. And from that point on, we were under a microscope at all times. Everyone in the local press, and in the local media, and the Department of Energy, from Washington, and Oak Ridge, were on our necks constantly, to see what we were doing and how we were doing it.

02:09:29
A:
And of course, it made our lives a lot more complicated, and we then began instituting more and more controls to try to make sure that nothing like this would never ever happen again.

02:09:43
Q:
And what kind of controls were in place then?

A:
Uh, they began checking the dust collectors daily then, instead of monthly, for one thing. And they closely examined the materials from which the dust bags were made to find materials that were better suited. And they made sure that the rings, the metal rings that held the dust bags in place were more secure, things of that sort. To make sure that this kind of thing would never happen again.

02:10:18
A:
This was, this was of course, our aim, our purpose. And I remained on site 'til the end of 1987 when I retired, December 31, 1987, and we never forgot the incident at Plant 9. It was always foremost in our minds, and we were determined to make sure that something like that would never happen again.

02:10:45
Q:
So you retired in 1987, and they shut the plant down (Comment: In 1989) '89 (Comment: The summer of 1989, production was, was halted.) What was your reaction to that?

A:
One of sadness. Uh, I was very, very proud of the fact that during our heyday, we produced anywhere from 7,000 to 10,000 *tons* of pure uranium metal, per year. We fed the reactors at Savannah River, Sou-, Achan, South Carolina, and at Hanford at Richland, Washington, uh, that were used to make plutonium for the weapons programs.

02:11:25
A:
And we were told time and again that there never was one single incident of a bad fuel core in those reactors. And that was certainly a compliment to our production operations. We never produced one single fuel core that ever went bad in the reactors. And that made us all feel very, very proud that we had contributed to our defense effort.

02:11:552
A:
And when I heard that production was shutting down, I felt badly that uh, we were in effect now, out of business. That our mission was no longer that of production; our mission was completely changed to one of cleaning up.

Q:
And we'll get into that in a second, but I'd like to talk a little bit about the Cold War. Um, the types of things that were going on in the, in the world at the time. And how did Fernald contribute to America's goals in the Cold War?

02:12:26
A:
Well, there were plants in other countries that did the same thing that we did. Uh, there was a plant in Russia that did exactly what we did. There were plants in England and France that did what we did. Uh, that produced uranium metal. And as a result, we felt that we were an important part of our defense effort. And we made a vital contribution to our national defense.

02:13:00
Q:
And what kind of things, um, from your perspective, were going on in the world right then that made it sort of a dangerous place, that made it, made it, us *need* to make uranium?

A:
Well, President Reagan called the Russians an evil empire, and we of course, were in the middle of a cold war with Russia. And as a result, we felt that we had to have at least as many weapons as they did, perhaps more. And I have no idea how our stockpile of weapons compared with theirs, or even today how it compares, but I just heard very recently that we still, both United States and Russia, have a huge stockpile of nuclear weapons.

02:13:44
A:
I hope that I never see the day when we would ever attempt to use any of these weapons, but it is comforting to know that we have such a stockpile for our defense. And it serves as a deterrent to any country that would want to take the liberty of, of doing the wrong thing with us, such as North Korea, or Iran, or uh, any other country, uh, Pakistan, India, uh, that would want to make any kind of nuclear

warfare. So uh, it certainly is a source of great satisfaction to me that I had some small role in our defense effort.

02:14:32
Q:
Uh, one of the terms they're using on site to uh, describe people who worked there during the Cold War is Cold War Warriors.

A:
Cold War Warriors; I haven't heard that before. That's very nice, very nice.

Q:
I kind o' like it, too (laughs). Um, so now, we've moved into cleanup, (Comment: Yes.) and how do you, how do, and of course you retired before the cleanup happened, but I know that you're still quite involved.

A:
Yes, I am now becoming more involved each month, by going back out there each month. I started back out there in November of 1999, and I'm going out there twice a month now with the title of Environmental Engineer. And it's my job to help people to uh, identify drums of material that were perhaps misidentified when they were originally drummed and coded. And try to tell them what the history of the materials might be, and try to advise them on what disposition should be made of those materials.

02:15:36
A:
And uh, the last couple o' times I was out there, we had two-hour meetings with the people who now have the contract to excavate the pits. And they asked us a lot of questions about the pits. What's in the pits. And we tried as best we could to answer their questions pit by pit. There are two pits out there, Pits 3 and 5, that were designated as wet pits, and the other pits, 1, and 2, and 4, and 6 that are dry pits, where we discarded dry materials.

02:16:15
A:
And we will continue to work with them to try to help them. And they have the assignment now, a difficult assignment of excavating the pits. Putting the contents of those pits through a dryer, dry out the materials, and then packaging them for shipment to, in trains, for shipment to uh, EnviroCare in Utah, or by truck to Mercury, Nevada, depending on what the material is.

02:16:47
A:
And this is going to be a huge, huge job. And then of course, there's the big problem of what to do with the silos. And even though there is a process known as vitrification, for converting materials of that nature into little glass pellets. Uh, we were not successful in doing it. I understand that we built the Pilot Plant several years ago, and the process simply didn't work.

02:17:17
A:
And so uh, apparently, we're going to give up on vitrification, even though it has been used for years in Sweden, and in Switzerland, and in Germany. Uh, we're going to give up on vitrification, and we're going to use instead, the process of turning the contents of Silos 1 and 2 into concrete blocks. We're going to take the material out, and dry it out because it was in the form of a sludge, and it's probably still quite wet.

02:17:49
A:
We're gonna dry it out, and we're going to put it in the form of concrete blocks, package those concrete blocks and ship those off to Utah or Nevada for what's called *shallow land burial*.

02:18:06
Q:
So the process review board is the entity that you've been working with.

A:
Yeah, it's called the Process Knowledge Review Panel. That's our title, Process Knowledge Review Panel. It consists of five of us retirees who do have some knowledge of the processes and the kinds of materials that were generated. And it's our job now, to be helpful to other groups that 're out there with difficult projects in front of them. See if we can help them get over their hurdles and their problems, to answer their questions, and to try to be of help to them if we can. That's our function.

02:18:50
A:
And each time when we go out there, there 're a group of people lined up to uh, to tell us their troubles, and their problems. And uh, we are, on a one by one basis, trying to help whomever we can. And as we get more involved, we'll get into smaller and smaller groups. And we may be working with these people on a one-on-one basis, to try to help them with their own specific problems and projects.

02:19:19
Q:
Now, you told me a great story about when you just had first retired. (Comment: Yes.) (Chuckling) Could you reiterate that for me?

A:
Uh, I was telling you a while ago that I had retired at the end of '87, and gone to Florida for the winter months. And uh, I told my staff as I left there, that if they have any problems to call me. And one day in the spring of 1988 while I was eating breakfast one morning, in my condo in Fort Lauderdale, I got a call from one o' the people in my office. I don't remember whether it was Charlie Lower or Harold Knu.

02:19:59
A:
And he said, "We have a drum of material on the storage pad, and we can't identify it. Would you tell us what it is?" And I ran and got my code-book, which I had taken with me to Florida. And I said, "Tell me what's stenciled on the drum." They gave me the code numbers, and I was able to tell them specifically what that material is, and more importantly, what its history was; how it was generated, how, what it may contain, and what it is as far as its ultimate disposition is concerned.

02:20:33
A:
And they were quite pleased that I could do that from afar away. And it comes with having worked with these materials for so many years, and having an intimate knowledge of what these materials are, and what the history of the materials might be, how they were generated, and what their ultimate disposition should be. Okay?

02:20:58
Q:
That's just a great story; (laughing). There in Florida eating breakfast. Um, just gonna ask you a real general question. Generally, how do you feel about your career at Fernald?

A:
I'm very proud of it. And I enjoyed going to work there every day. I worked with a lot of wonderful people. And when I left there, I had some 42 people uh, working with me in four different departments. And uh, they are technical people, and accountants, clerical people, and statisticians, and uh, I had a geologist and a chemist. And uh, a lot of very wonderful people of different disciplines.

02:21:41
A:
And uh, I liked the people, and we formed lasting friendships, and I enjoyed going to work every day. I really did. I hated the drive out there, especially on a snowy or icy day. That was my principle fear, is going down Blue Rock hill on an icy day; I had that experience more than once. And there were a number of times when it took me three hours to get home when the road was icy and it hadn't been treated.

02:22:11
A:
And it was pretty miserable, and it was a nightmare going and coming. But aside from that, at the plant, I enjoyed being there, I enjoyed what I did. I had a super fine office on the corner of the second floor front, overlooking the lobby. My office was there for many, many years overlooking the lobby. I don't know what's there now, probably one of the uh, major people in the Fluor Daniel, or DOE has that as an office now.

02:22:44
A:
But that was my office for many, many years, right there in the front corner of the building, over, of the Ad Building overlooking the lobby. And uh, and I loved that office, and I loved being there, and I loved dealing with people coast to coast. Every day I would call all over the country to talk with people about shipments and receipts. And I got to know many of these people first-hand.

02:23:10
A:
And last week, Charlie Lower picked up the phone while I was there, and called the headman at Oak Ridge accountability, in Oak Ridge, and I talked to him for the first time in fifteen or twenty years. And we both shed a tear or two talking with each other, and it was really great to renew the friendship that we had with the DOE people in Oak Ridge. Okay?

02:23:35
Q:
Great. And uh, how do you think the cleanup is going now?

A:
I am very impressed. I've been on the mailing list from the beginning, and every month, I get your paper, and I get mailings from Gary Stegner, and I read all these things, and I'm very, very impressed. Uh, Dennis Carr was kind enough to take us on a tour of the site a few weeks ago, and I honestly didn't recognize the place. With the buildings torn down, and with so many temporary structures that have been set up, I almost didn't recognize the place at all.

02:24:12
A:
And I'm very impressed with the progress that's being made, and I think everyone is to be commended for a job well done. (Comment: Terrific.) I just hope I live long enough to see 2006. I want to see the day that you return the plant to its original cattle-grazing condition.

Q:
And that was really my next question, too is they're tearing down buildings awfully quick, what would you like to see done with the land?

02:24:43
A:
I don't have any special preference, I'd like to see it turned into some kind of a recreational area, so that people can come out there and enjoy the facilities, and enjoy being there. And have picnics, or other types of leisure and recreation there, so that all thought of it having been a "nuclear bomb plant," and I say that in quotation marks, will be lost forever.

02:25:11
A:
That no one will ever look at that land as having been a part of the nuclear program, but an area that the people who live in that area. And who may have suffered as a result of the plant being there, can now once and forever enjoy being out there, and enjoy being on that land. That's what I'd like to see, something that will provide them with leisure, with recreation, with enjoyment that they'll enjoy being there instead of being fearful of the plant being nearby. Okay?

02:25:42
Q:
Great. Is there anything that we didn't cover that you wanted to talk about?

A:
I don't know what it might be. I'm just delighted that you've come here and that we had an opportunity to, to talk and get all these things off our chest. And if ever you want to talk to me again, why, I'll be happy to answer anything that I can. And I'm just delighted that you came here today, and are part of this, part of this discussion.

02:26:10
Q:
Terrific.

A:
Thank you for coming, and thank the photographers, the videographers for their, for their coming.

Q:
No problem, it's their job (laughing). (Comment: Okay.) We're gonna do something now we call "nat sound," we just need about 30 seconds, we can just stay in place where we are, and this is nat sound.

A:
Did I answer all your questions okay? (Comment: Um-hmm.) Okay. Okay, Good.